1.     A method for determining the concentration
of a specific lipoprotein, an apolipoprotein, or
lipid associated with a specific lipoprotein, in a
biological sample comprising:

adding to the sample antibody molecules
immunoreactive with a specific lipoprotein or
apolipoprotein, wherein the antibody specifically
binds to a stable, conformation independent epitope
which is uninfluenced by the lipid content;

allowing the antibody molecules time to bind to
the lipoprotein or apolipoprotein in the sample;
and

determining the amount of lipoprotein,
apolipoprotein, or lipid associated with a
lipoprotein bound by the immobilized antibody
molecules.

2.     The method of claim 1 wherein the antibody
molecules are immunoreactive with a lipoprotein
selected from the group consisting of HDL, LDL,
VLDL, and combinations thereof.

3.     The method of claim 2 wherein the antibody
is selected from the group consisting of monoclonal
antibodies, recombinant antibodies, and antibody
fragments.

4.     The method of claim 3 wherein the antibody
is the anti-LDL monoclonal antibody produced by the
hybridoma cell line $HB_3cB_3$ ATCC designation number
HB 11612.

5.     The method of claim 3 wherein the antibody
is a recombinant anti-LDL $RcB_3M_1D_4$ ATCC designation
number 69602.

6.     The method of claim 1 wherein the
antibodies are immobilized onto a solid phase
material, further comprising separating the solid
phase material containing the immobilized antibody
molecules from the biological sample.

7.    The method of claim 1, wherein the amount
of lipoprotein, apolipoprotein lipid is determined
by staining of the material bound to the
immobilized antibody using a lipid stain.

8.    The method of claim 7 wherein the
immobilized antibodies are immersed into the
biological sample and the lipoprotein lipid is
stained prior to immersing the immobilized
antibodies.

9.    The method of claim 8 further comprising
antibody immunoreactive with apolipoprotein which
is coupled to a protein stain and used to stain
lipoprotein in the sample, prior to immersing into
the sample the immobilized antibodies which then
bind to the stained antibody-bound apolipoprotein.

10.    The method of claim 1 wherein the
apolipoprotein is selected from the group
consisting of Apo A-I, Apo A-II, Apo B, Apo C-III,
and Apo E.

11.    The method of claim 1 wherein the
biological sample is selected from the group
consisting of blood, plasma, and serum.

12.    The method of claim 1 wherein the assay is
a turbidimetric assay.

13.    The method of claim 1 further comprising:
mixing an antibody immunoreactive with a
specific apolipoprotein into the sample;
allowing the antibody to bind to the
apolipoprotein in the sample,
adding to the mixture a second antibody
immunoreactive with a second, distinct epitope of
the apolipoprotein,
allowing the second immobilized antibody to
bind to the apolipoprotein,
detecting the presence of the
apolipoprotein bound by both antibodies, and

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determining the amount of apolipoprotein
bound by both antibodies.

14.   The method of claim 13 wherein the
apolipoprotein is apolipoprotein Apo B-100.

15.   The method of claim 13 for determining the
relative ratio of VLDL to HDL comprising

determining the amount of VLDL in a sample based
on the amount of Apo C-III present in the VLDL in
the sample by

providing Pan B antibody which is characterized
by an equal binding and high affinity for all Apo
B-containing lipoproteins in human plasma,

providing soluble antibody immunoreactive with
Apo C-III having binding affinity and specificity
similar to $XbA_3$,

mixing the soluble antibody reactive with Apo C-
III with the biological sample to form complexes
between the soluble antibody and the Apo C-III
containing lipoprotein particles,

adding the immobilized Pan B antibody to the
biological sample, and

determining the amount of Apo C-III associated
with Apo B, which is the amount of Apo C-III
present in VLDL in the sample; and

determining the amount of HDL in a sample
based on the amount of Apo C-III present in the HDL
in the sample by

providing Apo A-I antibody immunoreactive
specifically with Apo A-I having a binding affinity
and specificity similar to $AIbD_5$ and $AIbE_2$,

providing soluble antibody immunoreactive with
Apo C-III having binding affinity and specificity
similar to $XbA_3$,

mixing the soluble antibody reactive with Apo C-
III with the biological sample to form complexes
between the soluble antibody and the Apo C-III
containing lipoprotein particles,

immersing the immobilized anti-Apo A-I antibody
into the biological sample, and

determining the amount of Apo C-III associated
with Apo A-I, which is the amount of Apo C-III
present in HDL in the sample.

16. The method of claim 13 for determining the
relative ratio of VLDL to HDL comprising

determining the amount of VLDL in a sample based
on the amount of Apo E present in the VLDL in the
sample by

providing Pan B antibody which is characterized
by an equal binding and high affinity for all Apo
B-containing lipoproteins in human plasma,

providing a mixture of soluble antibody
immunoreactive with Apo E having binding affinity
and specificity similar to $EfB_1$ which binds to Apo E
associated predominantly with VLDL and soluble
antibody immunoreactive with Apo E having binding
affinity and specificity similar to $EfD_3$ which binds
to Apo E associated predominantly with HDL,

adding the mixture of soluble antibodies
reactive with Apo E to the biological sample to
form complexes between the soluble antibodies and
Apo E containing particles,

immersing the immobilized Pan B antibody into
the biological sample, and

determining the amount of Apo E associated with
Apo B which is the Apo E present predominantly in
VLDL in the sample; and

determining the amount of HDL in a sample based
on the amount of Apo E present in the HDL in the
sample by

providing Apo A-I antibody immunoreactive
specifically with Apo A-I having a binding affinity
and specificity similar to $AIbD_5$,

providing a mixture of soluble antibody
immunoreactive with Apo E having binding affinity

and specificity similar to $EfB_1$, which binds to Apo
E predominantly associated with VLDL, and soluble
antibody immunoreactive with Apo E having binding
affinity and specificity similar to $EfD_3$, which
binds to Apo E predominantly associated with HDL,

adding the mixture of soluble antibodies
reactive with Apo E to the biological sample to
form complexes between the soluble antibodies and
Apo E containing particles, and

determining the amount of Apo E associated with
Apo A-I, which is the amount of Apo E present in
HDL in the sample.

17.   The method of claim 13 for determining the
relative ratio of LPA-I and LPA-II lipoprotein
particles comprising

providing anti-Apo A-I antibody immunoreactive
specifically with Apo A-I having a binding affinity
and specificity similar to $AIbD_5$,,

providing anti-Apo A-II antibody immunoreactive
specifically with Apo A-II having a binding
affinity and specificity similar to $CdB_5$;

mixing the soluble anti-Apo A-I antibody having
a binding affinity and specificity similar to $AlbE_2$
to form complexes with both LPA-I and LPA-I:AII;

immersing the anti-Apo A-I antibody into the
biological sample and determining the quantity of
Apo A-I associated with both LPA-I and LPA-II
lipoprotein particles;

immersing the anti-Apo A-II antibody into the
biological sample and determining the quantity of
Apo A-I associated with the LPA-I:AII.

18.   A composition for determining the
concentration of a lipoprotein, apolipoprotein, or
lipid associated with a specific lipoprotein in a
biological sample comprising:

a solid phase material having immobilized
thereon antibody molecules specifically

immunoreactive with a specific lipoprotein or
apolipoprotein, wherein the antibody specifically
binds to a stable, conformation independent epitope
which is uninfluenced by the lipid content.

~~19. The composition of claim 18 further~~
comprising a solid support to which the solid phase
material is attached to form a dipstick.

20. The composition of claim 18 wherein the
antibody is selected from the group consisting of
monoclonal antibodies, recombinant antibodies, and
antibody fragments.

21. The composition of claim 18 wherein the
antibody is the anti-~~LDL monoclonal~~ antibody
produced ~~by the~~ hybridoma cell line HB$_3$cB$_3$ ATCC
~~designation~~ number HB 11612.

22. The composition of claim 18 wherein the
antibody is a recombinant anti-LDL RcB$_3$M$_1$D$_4$ ATCC
designation number 69602.

23. The composition of claim 18 further
comprising a solution containing molecules of a
second soluble antibody immunoreactive with a
second distinct epitope of the lipoprotein or
apolipoprotein which is immunoreactive with the
antibody molecules immobilized on the solid phase
material.

24. The composition of claim 18 wherein the
antibody molecules are immobilized to the solid
phase material using avidin-biotin complexes.

25. The composition of claim 19 further
comprising at least one internal standard
comprising a known amount of a particular
lipoprotein, lipoprotein lipid, or apolipoprotein
immobilized on the solid phase material.

26. The composition of claim 18 wherein the
solid phase material is selected from the group
consisting of nitrocellulose, polyvinylidene

difluoride, partially acid-hydrolyzed nylon, polystyrene, polypropylene, and paper.

27.  The composition of claim 18 wherein the apolipoprotein is selected from the group consisting of Apo A-I, Apo A-II, Apo B, Apo C-III, and Apo E.
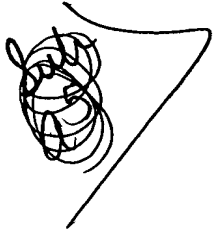
28.  The composition of claim 18 for determining the relative ratio of VLDL to HDL comprising

immobilized Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

soluble antibody immunoreactive with Apo C-III having binding affinity and specificity similar to $XbA_3$,

immobilized Apo A-I antibody immunoreactive specifically with Apo A-I having a binding affinity and specificity similar to $AIbD_5$ and $AIbE_2$, and

soluble antibody immunoreactive with Apo C-III having binding affinity and specificity similar to $XbA_3$.

29.  The composition of claim 18 for determining the relative ratio of VLDL to HDL comprising

immobilized Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

a mixture of soluble antibody immunoreactive with Apo E having binding affinity and specificity similar to $EfB_1$ which predominantly binds to Apo E associated with VLDL and soluble antibody immunoreactive with Apo E having binding affinity and specificity similar to $EfD_3$ which predominantly binds to Apo E in HDL,

immobilized Apo A-I antibody immunoreactive specifically with Apo A-I having a binding affinity and specificity similar to $AIbD_5$, and

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a mixture of soluble antibody immunoreactive
with Apo E having binding affinity and specificity
similar to $EfB_1$ which binds to Apo E predominantly
associated with VLDL and soluble antibody
immunoreactive with Apo E having binding affinity
and specificity similar to $EfD_3$ which predominantly
binds to Apo E in HDL.

30.   The composition of claim 18 for determining
the relative ratio of LPA-I and LPA-II lipoprotein
particles comprising

immobilized Apo-A-I antibody which binds Apo A-I
lipoproteins in human plasma having a binding
affinity and specificity with Apo $AIbD_5$; and

immobilized Apo A-II antibody immunoreactive
specifically with Apo A-II having a binding
affinity and specificity similar to $CdB_5$.

31.   A method for making a composition
comprising

immobilizing on a solid phase material antibody
molecules immunoreactive with a specific
lipoprotein or apolipoprotein, wherein the antibody
molecules are selected from the group consisting of
monoclonal antibodies, recombinant antibodies, and
fragments thereof, and wherein the antibody has a
binding affinity of at least $10^9$ for a stable,
conformation independent epitope which is
uninfluenced by the lipid content.

32.   A method for making a composition for
determining the concentration of a specific
lipoprotein, an apolipoprotein, or lipid associated
with a specific lipoprotein, in a biological sample
comprising

immobilizing on a solid phase material antibody
molecules immunoreactive with a specific
lipoprotein or apolipoprotein, wherein the antibody
molecules are selected from the group consisting of
monoclonal antibodies, recombinant antibodies, and

fragments thereof, and wherein the antibody specifically binds to a stable, conformationindependent epitope which is uninfluenced by the lipid content.

33. The method according to claim 32 wherein the antibody molecule is specifically immunoreactive with LDL.

34. The method of claim 32 wherein the apolipoprotein is selected from the group consisting of Apo A-I, Apo A-II, Apo B, Apo C-III, and Apo E.

35. An antibody molecule specifically immunoreactive with LDL that does not significantly cross-react with other lipoproteins in whole blood, blood plasma or blood serum, wherein the molecule is selected from the group consisting of monoclonal antibodies, recombinant antibodies, and fragments thereof and wherein the antibody specifically binds to a stable, conformation independent epitope which is uninfluenced by the lipid content.

36. The antibody molecule of claim 35 wherein the antibody is the anti-LDL monoclonal antibody produced by the hybridoma cell line $HB_3cB_3$ ATCC designation number HB 11612.

37. The antibody molecule of claim 35 wherein the antibody is a recombinant anti-LDL $RcB_3M_1D_4$ ATCC designation number 69602.

38. The antibody molecule of claim 35 immobilized to a solid support.

39. The antibody molecule of claim 38 wherein the support is a resin for purification of apolipoprotein, lipoprotein, or lipid associated therewith.

40. A method for purifying an apolipoprotein comprising

reacting a solution containing apolipoprotein with an immobilized antibody selected from the

group consisting of the anti-LDL monoclonal antibody produced by the hybridoma cell line HB₃cB₃ ATCC designation number HB 11612 and the anti-LDL $RcB_3M_1D_4$ recombinant antibody ATCC designation number 69602.

41.  The method of claim 12 wherein binding of the second antibody forms a precipitate of the antigen and both bound antibodies which can be detected in solution.

42.  The method of claim 1 for determining the relative ratio of LDL to HDL comprising

adding to the sample antibody molecules immunoreactive with low density lipoprotein and not cross-reactive with high density lipoprotein and determining the amount of low density lipoprotein;

adding to the sample antibody molecules immunoreactive with high density lipoprotein and not cross-reactive with low density lipoprotein and determining the amount of high density lipoprotein; and

determining the ratio of the amount of low density lipoprotein with the amount of high density lipoprotein.

43.  The method of claim 41 wherein the anti-low density lipoprotein antibody is selected from the group consisting HB₃cB₃ and recombinant $RcB_3M_1D_4$ antibodies.

44.  The method of claim 43 wherein the method comprises

(a) determining the amount of low density lipoprotein in a sample by

providing immobilized anti-LDL antibodies,

providing soluble labelled anti-ApoB antibodies,

mixing the soluble anti-ApoB antibody in the biological sample to form complexes between the soluble antibody and the ApoB containing lipoprotein particles,

determining the amount of ApoB captured by the immobilized antibody to calculate the amount of LDL,

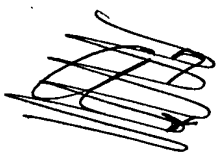(b) determining the amount of high density lipoprotein in a sample by

providing immobilized anti-ApoA-I antibody having a binding affinity and specificity similar to AIbD$_5$,

providing soluble labelled antibody having a binding affinity and specificity similar to AIbE$_2$,

mixing the soluble antibody reactive with ApoA-I in the biological sample to form complexes between the soluble antibody and the ApoA-I in lipoprotein particles,

determining the amount of ApoA-I captured by the immobilized antibody and calculating the amount of HDL from the amount of ApoA-I, and

(c) calculating the ratio of LDL to HDL.

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